Technology Advisory
Open Source Viability at the State of Utah

November 20, 2006

Prepared by
Robert Woolley
Chief Technologist and Strategic Planner

Introduction

As the State reviews new software solutions for agency and enterprise needs, the question of open source alternatives continues to be raised. Information Technology (IT) leadership has a long history with established vendors, forming conclusions based upon the ability of a vendor to keep promises and deliver effective solutions.

The commercial vendor community often does an excellent job of packaging solutions that might otherwise be unduly complicated for customers to implement. Commercial vendors also have established mechanisms for providing support and maintenance for their products. All of these are decided pluses for the commercial vendor community, yet all of these benefits come with initial investment and ongoing maintenance cost requirements that can be significant over the life of a software product. In addition, commercial vendors may offer product enhancements, add-ons, and training components that require additional expenditures by the customer.

What is Open Source

Open source refers to software that is created by a development community rather than a single vendor. Typically programmed by volunteers from many organizations, the source code of open source software is free and available to anyone who would like to use it or modify it for their own purposes. Although most all operating environments have open source projects, open source is particularly common in the UNIX/Linux/Java world.

Open source developers claim that a broad group of programmers produces a more useful and more bug-free product because more people are constantly reviewing the code. The commercial vendor community counters that too many people are involved and quality suffers because of a lack of product control. Open source products typically have a longer potential useful life and are not as dependent upon revenues for survival.

The open source movement has grown dramatically over the last decade with venture capital investments in the hundreds of millions of dollars. This has produced some

significant open source software solutions and environments that were not a part of the completive landscape as little as two years ago.

Why Open Source

States and IT departments everywhere are generally under pressure to do more at a lower cost. Cost becomes a significant driver in looking at open source alternatives. The other major issue is adaptability to the specific needs of an organization. Open source facilitates implementation and investment in only the functionalities actually needed by the customer, rather than paying for a more expensive super set of capabilities, as is often the case with commercial products. Time-to-benefit may also be enhanced with open source implementations.

Open source benefits and success factors common to successful open source vendors include:

- Cost: Open source costs less. The software is freely available and can be easily acquired. Other development costs are no greater, and in many cases are much less than many comparable commercial environments.

- Simplicity: The simpler the solution the better. Easier implementation results in faster completion times, cost savings, better ROI, greater adoption, and lower failure rates.

- Integration: Open source products tend to integrate with other open source and commercial vendors to help establish interoperability and leveraging of existing environments.

- Standards Based: The open source community relies heavily on open standards with a strong base of commercial and industry consortium support. Skill sets needed for implementation are often already available among IT staff.

- Flexibility: Implement what is needed, do it quickly, and begin rapidly providing needed benefits.

- Services: The open source community is now providing packaged service offerings as well as a wide array of consulting services and on demand offerings.

Alignment with Business Requirements

State customers are increasingly requiring less expensive service oriented delivery models. Software as a service, on demand applications, and adoption of service oriented architectures (SOA) and Web services facilitate an agency’s ability to use applications and exchange information more easily. The lower cost structure and flexibility provided by open source will accelerate this trend.

Open source technologies facilitate the ability of the State to meet specific agency business requirements in a more timely and cost effective manner. A recent ZDNET blog summarized the concept from a customer perspective:

> *"A big win for users is freedom. Freedom to ship copies to their branches and across borders without having to mess around with license servers. Freedom to tweak stuff to more exactly suit them. Freedom to not reinvent the wheel. Freedom to try stuff out without having to drop six figures to get started. Many freedoms. The traditional software model has been to fence an idea off and charge admission. Sell people back meager quantities of the freedoms we should all have. That will only work now in specialized situations, which is bad news for businesses unwilling to abandon the traditional model."*

These kinds of freedoms can be big motivators for agencies with limited budgets and rapidly changing service expectations from their constituencies. On a worldwide basis, governments are increasingly turning to open source to reduce expenses and provide increased adaptability and flexibility. This same trend which began five years ago internationally[1] is now beginning to appear in a number of state governments.

Promise and Reality

The core attributes of open source—shared intellectual property, collaboration, peer review, transparency, unrestricted use, and derivative works—are appealing to a broad set of industries, and problems are often beyond software and IT. Open source is becoming an accepted approach to software development by an increasing number of software companies and IT organizations. Even Microsoft has entered into a recent open source agreement with Novell. BEA and Sun Microsystems are other major contributors to open source products and standards. Sun recently released open source Java.

Issue: Support Availability

Support for open source products has been an ongoing concern in the open source community by experienced IT managers. Accordingly, the open source community has adapted to those concerns. Major open source support offerings that address commercial support issues have recently been announced by Microsoft, Novell, Sun Microsystems, Mule Source, and a number of open source groups that provide 24 x 7 support for many open source products. As these offerings continue to mature the support issues surrounding open source will continue to diminish.

Issue: Inadequate for Mission Critical Applications and Infrastructure

A common theme used as criticism for open source is that it will not work for mission critical applications. Forrester has indicated that "…although fewer than half of the large enterprises in Europe and North America are actively using or piloting open source software, a majority of those are using it for mission-critical applications and infrastructure. While overall use is higher in Europe, North American companies are

[1] "Governments push open-source software" C/NET News, August 29, 2001 at http://news.com.com/2100-1001-272299.html

more likely to have embraced open source for mission-critical use."[2] This same trend has been observed by a number of other analyst groups as well.

Issue: Complexity

Complexity seems to be a consistent concern by many open source customers. Forrester reports very few disappointments with open source software, but implementation complexity leads the list.[3] This is undoubtedly one of the major drivers for support and the vastly improved documentation now appearing in the open source community. Interestingly, there are very few examples of open source project failures due to complexity.

Business Drivers for Open Source

Forrester[4] reports that the main driver for the adoption of open source solutions is cost containment and the freedom to adapt software to specific customer needs. They also report that access to source code, a basic premise of open source, is not used with any degree of frequency. Overall, Forrester analysts suggest that open source use will continue to increase, but that implementation of open source solutions requires organizational commitment. They recommend that firms should consider open source solutions for mission critical environments, and that open source "…is now a viable alternative for enterprise architecture."[5]

Conclusions

Open source is a viable alternative for enterprise solutions in many areas, and is highly adaptable to the needs of the enterprise. Cost savings are a significant business driver for adoption. Commercial applications will continue to play an important role, especially with applications that are highly specialized, such as facilities management. Support is improving rapidly enough for that to be a much less important concern. Complexity is real and must be addressed, but DTS has personnel capable of addressing these issues from both architecture and implementation perspectives.

The potential for significant cost savings and faster times-to-benefit for open source applications seem to be compelling arguments for its use. As a matter of policy, perhaps the first question on enterprise implementations should be an assessment of what open source solutions are available before purchasing commercial products. The State should at least openly examine the alternatives.

---

[2] Goulde, Michael, et al. *Open Source Becoming Mission-Critical In North America and Europe*, Forrester Research, September 11, 2006.
[3] Goulde, Michael, et al. *Open Source: It Is a Business and a Technology Strategy*, Forrester Research, September 11. 2006.
[4] Goulde, Michael, et al. *Open Source Becoming Mission-Critical In North America and Europe*, Forrester Research, September 11, 2006.
[5] *Ibid.*